IN THE CLAIMS:

Claims 1-101 (Cancelled)

102. (Previously Presented) A method of forming a compound comprising:
(a) at least one neutral, positive, or negative increased binding energy hydrogen species having a binding energy

(i) greater than the binding energy of the corresponding ordinary hydrogen species, or

(ii) greater than the binding energy of any hydrogen species for which the corresponding ordinary hydrogen species is unstable or is not observed because the ordinary hydrogen species' binding energy is less than thermal energies at ambient conditions, or is negative; and
(b) at least one other element; the method comprising the steps of:
providing a gaseous catalyst comprising at least one selected from the group consisting of atoms of Li, Be, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Kr, Rb, Sr, Nb, Mo, Pd, Sn, Te, Cs, Ce, Pr, Sm, Gd, Dy, Pb, and Pt;

providing gaseous hydrogen atoms;
reacting said gaseous catalyst with said gaseous hydrogen atoms, thereby forming hydrino from said gaseous hydrogen atoms;
reacting said hydrino with at least one selected from the group consisting of a source of electrons in combination with at least one other element, H^+, increased binding energy hydrogen species, and other elements to form the compound.

103. (Original) A method of claim 102 of forming novel compounds wherein a gaseous catalysts comprises at least one selected from the group consisting of a source of K^+, a source of Rb^+, and a source of He^+.

104. (Original) A method of claim 103 of forming novel compounds wherein the source of K^+ is potassium metal.

105. (Original) A method of claim 103 of forming novel compounds wherein the source of Rb^+ is rubidium metal.

106. (Original) A method of claim 102 of forming novel compounds further comprising the step of applying an adjustable electric or magnetic field to control the rate of formation of hydrino.

107. (Original) A method for extracting energy from hydrogen atoms comprising the steps of:
providing a gaseous catalyst comprising at least one selected from the group consisting of atoms of Li, Be, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Kr, Rb, Sr, Nb, Mo, Pd, Sn, Te, Cs, Ce, Pr, Sm, Gd, Dy, Pb, and Pt;
providing gaseous hydrogen atoms; and
reacting said gaseous catalyst with said gaseous hydrogen atoms, thereby releasing energy from said gaseous hydrogen atoms.

108. (Original) A method of claim 107 for extracting energy from hydrogen atoms wherein a gaseous catalysts comprises at least one selected from the group consisting of a source of K^+, a source of Rb^+, and a source of He^+.

109. (Original) A method of claim 108 for extracting energy from hydrogen atoms wherein the source of K^+ is potassium metal.

110. (Original) A method of claim 108 for extracting energy from hydrogen atoms wherein the source of Rb^+ is rubidium metal.

111. (Original) A method of claim 107 for extracting energy from hydrogen atoms further comprising the step of applying an adjustable electric or magnetic field to control the rate of energy release.

112. (Original) A cell for extracting energy from hydrogen atoms comprising:
a reaction vessel;
a source of gaseous hydrogen atoms; and
a source of a gaseous catalyst comprising at least one selected from the group consisting of atoms of Li, Be, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Kr, Rb, Sr, Nb, Mo, Pd, Sn, Te, Cs, Ce, Pr, Sm, Gd, Dy, Pb, and Pt.

113. (Original) A cell of claim 112 for extracting energy from hydrogen atoms wherein a gaseous catalysts comprises at least one selected from the group consisting of a source of K^+, a source of Rb^+, and a source of He^+.

114. (Original) A cell of claim 113 for extracting energy from hydrogen atoms wherein the source of K^+ is potassium metal.

115. (Original) A cell of claim 113 for extracting energy from hydrogen atoms wherein the source of Rb^+ is rubidium metal.

116. (Original) A cell of claim 112 for extracting energy from hydrogen atoms further comprising an adjustable electric or magnetic field source.

117. (Original) A cell for extracting energy from hydrogen atoms comprising:
a reaction vessel;

a chamber communicating with said vessel, said chamber containing gaseous hydrogen atoms or a source of said hydrogen atoms; and
a catalyst reservoir communicating with said reaction vessel or a boat contained in said reaction vessel, said catalyst reservoir or boat containing a gaseous catalyst comprising at least one selected from the group consisting of atoms of Li, Be, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Kr, Rb, Sr, Nb, Mo, Pd, Sn, Te, Cs, Ce, Pr, Sm, Gd, Dy, Pb, and Pt.

118. (Original) A cell of claim 117 for extracting energy from hydrogen atoms wherein a gaseous catalysts comprises at least one selected from the group consisting of a source of K^+, a source of Rb^+, and a source of He^+.

119. (Original) A cell of claim 118 for extracting energy from hydrogen atoms wherein the source of K^+ is potassium metal.

120. (Original) A cell of claim 118 for extracting energy from hydrogen atoms wherein the source of Rb^+ is rubidium metal.

121. (Original) A cell of claim 117 for extracting energy from hydrogen atoms further comprising an adjustable electric or magnetic field source.

122. (Previously Presented) A method of claim 121, wherein the increased binding energy hydrogen species is selected from the group consisting of H_n, H_n^-, and H_n^+ where n is a positive integer, with the proviso that n is greater than 1 when H has a positive charge.

123. (Previously Presented) A method of claim 121, wherein the increased binding energy hydrogen species is selected from the group consisting of (a) hydride ion having a binding energy that is greater than the binding of ordinary hydride ion (about 0.8 eV) for $p = 2$ up to 23 in which the binding energy is represented by

$$Binding\ Energy = \frac{\hbar^2\sqrt{s(s+1)}}{8\mu_e a_0^2\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^2} - \frac{\pi\mu_0 e^2\hbar^2}{m_e^2 a_0^3}\left(1+\frac{2^2}{\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^3}\right)$$

where p is an integer greater than one, $s = 1/2$, π is pi, $\hbar$ is Planck's constant bar, μ_o is the permeability of vacuum, m_e is the mass of the electron, μ_e is the reduced electron mass, a_o is the Bohr radius, and e is the elementary charge; (b) hydrogen atom having a binding energy greater than about 13.6 eV; (c) hydrogen molecule having a first binding energy greater than about 15.5 eV; and (d) molecular hydrogen ion having a binding energy greater than about 16.4 eV.

124. (Previously Presented) A method of claim 123, wherein the increased binding energy hydrogen species is a hydride ion having a binding energy of about 3.0, 6.6, 11.2, 16.7, 22.8, 29.3, 36.1, 42.8, 49.4, 55.5, 61.0, 65.6, 69.2, 71.5, 72.4, 71.5, 68.8, 64.0, 56.8, 47.1, 34.6, 19.2, or 0.65 eV.

125. (Previously Presented) A method of claim 124, wherein the increased binding energy hydrogen species is a hydride ion having the binding energy:

$$Binding\ Energy = \frac{\hbar^2\sqrt{s(s+1)}}{8\mu_e a_0^2\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^2} - \frac{\pi\mu_0 e^2\hbar^2}{m_e^2 a_0^3}\left(1+\frac{2^2}{\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^3}\right)$$

where p is an integer greater than one, $s = 1/2$, π is pi, $\hbar$ is Planck's constant bar, μ_o is the permeability of vacuum, m_e is the mass of the electron, μ_e is the reduced electron mass, a_o is the Bohr radius, and e is the elementary charge.

126. (Previously Presented) A method of claim 121, wherein the increased binding energy hydrogen species is selected from the group consisting of

a. a hydrogen atom having a binding energy of about $\frac{13.6\,eV}{\left(\frac{1}{p}\right)^2}$ where p is an integer,

b. an increased binding energy hydride ion (H^-) having a binding energy of about $\frac{\hbar^2\sqrt{s(s+1)}}{8\mu_e a_0^2\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^2} - \frac{\pi\mu_0 e^2\hbar^2}{m_e^2 a_0^3}\left(1+\frac{2^2}{\left[\frac{1+\sqrt{s(s+1)}}{p}\right]^3}\right)$ where $s = 1/2$, π is pi, $\hbar$ is Planck's constant bar, μ_o is the permeability of vacuum, m_e is the mass of the electron, μ_e is the reduced electron mass, a_o is the Bohr radius, and e is the elementary charge;

c. an increased binding energy hydrogen species $H_4^+(1/p)$;

d. an increased binding energy hydrogen species trihydrino molecular ion, $H_3^+(1/p)$, having a binding energy of about $\frac{22.6}{\left(\frac{1}{p}\right)^2}eV$ where p is an integer,

e. an increased binding energy hydrogen molecule having a binding energy of about $\frac{15.5}{\left(\frac{1}{p}\right)^2} eV$; and

f. an increased binding energy hydrogen molecular ion with a binding energy of about $\frac{16.4}{\left(\frac{1}{p}\right)^2} eV$.

127. (Previously Presented) A method of claim 126, wherein p is from 2 to 200.

128. (Previously Presented) A method of claim 121, which is greater than 50 atomic percent pure.

129. (Previously Presented) A method of claim 128, which is greater than 90 atomic percent pure.

130. (Previously Presented) A method of claim 129, which is greater than 98 atomic percent pure.

131. (Previously Presented) A method of claim 121, wherein said increased binding energy hydrogen species is negative.

132. (Previously Presented) A method of claim 131, comprising at least one cation.

133. (Previously Presented) A method of claim 132, wherein the cation is a proton, H_2^+, H_3^+, $H_2^*\left[2c' = \frac{2a_o}{p}\right]^+$, $H_3^+(1/p)$, or $H_4^+(1/p)$.

134. (Previously Presented) A method of claim 121, wherein the other element is an ordinary hydrogen atom or an ordinary hydrogen molecule.

135. (Previously Presented) A method of claim 121, having a formula $\left[KH_mKCO_3\right]_n$ wherein m and n are each an integer, the compound contains at least one H, and the hydrogen content H_m of the compound comprises at least one said increased binding energy hydrogen species.

136. (Previously Presented) A method of claim 121, having a formula $\left[KH_mKNO_3\right]_n^{m'+}\ n'X^-$ wherein m, m', n and n' are each an integer, X is a singly negative charged anion, the compound contains at least one H, and the hydrogen content H_m of the compound comprises at least one said increased binding energy hydrogen species.

137. (Previously Presented) A method of claim 121, having a formula $\left[KHKNO_3\right]_n$ wherein n is an integer, and the hydrogen content H of the compound comprises at least one said increased binding energy hydrogen species.

138. (Previously Presented) A method of claim 121, having a formula $\left[KHKOH\right]_n$ wherein n is an integer and the hydrogen content H of the compound comprises at least one said increased binding energy hydrogen species.

139. (Previously Presented) A method of claim 121, having a formula $\left[MH_mM'X\right]_n$ wherein m and n are each an integer, M and M' are each an alkali or alkaline earth cation, X is a singly or doubly negative charged anion, the compound

contains at least one H, and the hydrogen content H_m of the compound comprises at least one said increased binding energy hydrogen species.

140. (Previously Presented) A method of claim 121, having a formula $[MH_mM'X']_n^{m'+}\ n'X^-$ wherein m, m', n, and n' are each an integer, M and M' are each an alkali or alkaline earth cation, X and X' are a singly or doubly negative charged anion, the compound contains at least one H, and the hydrogen content H_m of the compound comprises at least one said increased binding energy hydrogen species.

141. (Previously Presented) A method of claim 121, having a formula $[MH_mM'X']_n^{m'-}\ n'M''^+$ wherein m, m', n, and n' are each an integer, M, M', and M'' are each an alkali or alkaline earth cation, X and X' are each a singly negative charged anion, the compound contains at least one H, and the hydrogen content H_m of the compound comprises at least one increased binding energy hydrogen species.

142. (Previously Presented) A method of claim 121, having a formula $[MH_m]_n^{m'+}\ n'X^-$ wherein m, m', n, and n' are each an integer, M is alkali or alkaline earth, organic, organometalic, inorganic, or ammonium cation, X is a singly or doubly negative charged anion, the compound contains at least one H, and the hydrogen content H_m of the compound comprises at least one increased binding energy hydrogen species.

143. (Previously Presented) A method of claim 121, having a formula $[MH_m]_n^{m'-}\ n'M'^+$ wherein m, m', n, and n' are each an integer, M and M' are an

alkali or alkaline earth, organic, organometalic, inorganic, or ammonium cation, the compound contains at least one H, and the hydrogen content H_m of the compound comprises at least one increased binding energy hydrogen species.

144. (Previously Presented) A method of claim 121, having a formula $M(H_{10})_n$ wherein n is an integer, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_{16})_n$ of the compound comprises at least one increased binding energy hydrogen species.

145. (Previously Presented) A method of claim 121, having a formula $M(H_{10})_n$ wherein n is an integer, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_{16})_n$ of the compound comprises at least one increased binding energy hydrogen species.

146. (Previously Presented) A method of claim 121, having a formula $M^+(H_{16})_n^-$ wherein n is an integer, M is other element such as an alkali, organic, organometalic, inorganic, or ammonium cation, and the hydrogen content $(H_{16})_n^-$ of the compound comprises at least one increased binding energy hydrogen species.

147. (Previously Presented) A method of claim 121, having a formula $M^+(H_{16})_n^-$ wherein n is an integer, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_{16})_n^-$ of the compound comprises at least one increased binding energy hydrogen species.

148. (Previously Presented) A method of claim 121, having a formula $M(H_{16})_n$ wherein n is an integer, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_{16})_n$ of the compound comprises at least one increased binding energy hydrogen species.

149. (Previously Presented) A method of claim 121, having a formula $M(H_{16})_n$ wherein n is an integer, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_{16})_n$ of the compound comprises at least one increased binding energy hydrogen species.

150. (Previously Presented) A method of claim 121, having a formula $M(H_{24})_n$ wherein n is an integer, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_{24})_n$ of the compound comprises at least one increased binding energy hydrogen species.

151. (Previously Presented) A method of claim 121, having a formula $M(H_{24})_n$ wherein n is an integer, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_{24})_n$ of the compound comprises at least one increased binding energy hydrogen species.

152. (Previously Presented) A method of claim 121, having a formula $M(H_{60})_n$ wherein n is an integer, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_{60})_n$ of the compound comprises at least one increased binding energy hydrogen species.

153. (Previously Presented) A method of claim 121, having a formula $M(H_{60})_n$ wherein n is an integer, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_{60})_n$ of the compound comprises at least one increased binding energy hydrogen species.

154. (Previously Presented) A method of claim 121, having a formula $M(H_{70})_n$ wherein n is an integer, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_{70})_n$ of the compound comprises at least one increased binding energy hydrogen species.

155. (Previously Presented) A method of claim 121, having a formula $M(H_{70})_n$ wherein n is an integer, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_{70})_n$ of the compound comprises at least one increased binding energy hydrogen species.

156. (Previously Presented) A method of claim 121, having a formula $M(H_{10})_q(H_{16})_r(H_{24})_s(H_{60})_t(H_{70})_u$ wherein q, r, s, t, and u are each an integer including zero but not all zero, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_{10})_q(H_{16})_r(H_{24})_s(H_{60})_t(H_{70})_u$ of the compound comprises at least one increased binding energy hydrogen species.

157. (Previously Presented) A method of claim 121, having a formula $M(H_{10})_q(H_{16})_r(H_{24})_s(H_{60})_t(H_{70})_u$ wherein q, r, s, and t are each an integer including zero but not all zero, M is an increased binding energy hydrogen

compound, and the hydrogen content $(H_{10})_q(H_{16})_r(H_{24})_s(H_{60})_t(H_{70})_u$ of the compound comprises at least one increased binding energy hydrogen species.

158. (Previously Presented) A method of claim 121, having a formula MX wherein M is positive, neutral, or negative and is selected from the list of H_{16}, $H_{16}H$, $H_{16}H_2$, $H_{24}H_{23}$, OH_{22}, OH_{23}, OH_{24}, $MgH_2\ H_{16}$, $NaH_3\ H_{16}$, $H_{24}H_2O$, CNH_{16}, CH_{30}, SiH_4H_{16}, $(H_{16})_3\ H_{15}$, $SiH_4(H_{16})_2$, $(H_{16})_4$, H_{70}, $Si_2H_6H_{16}$, $(SiH_4)_2H_{16}$, $SiH_4(H_{16})_3$, CH_{70}, NH_{69}, NH_{70}, NHH_{70}, OH_{70}, H_2OH_{70}, FH_{70}, H_3OH_{70}, SiH_2H_{60}, $Si(H_{16})_3\ H_{15}$, $Si(H_{16})_4$, $Si_2H_6(H_{16})_2$, $Si_2H_7(H_{16})_2$, $SiH_3(H_{16})_4$, $(SiH_4)_2(H_{16})_2$, $O_2(H_{16})_4$, $SiH_4(H_{16})_4$, NOH_{70}, O_2H_{69}, $HONH_{70}$, O_2H_{70}, H_2ONH_{70}, $H_3O_2H_{70}$, $Si_2H_6(H_{24})_2$, $Si_2H_6(H_{16})_3$, $(SiH_4)_3H_{16}$, $(SiH_4)_2(H_{16})_3$, $(OH_{23})H_{16}H_{70}$, $(OH_{24})H_{16}H_{70}$, $Si_3H_{10}(H_{16})_2$, Si_2H_{70}, $Si_3H_{11}(H_{16})_2$, $Si_2H_7(H_{16})_4$, $(SiH_4)_3(H_{16})_2$, $(SiH_4)_2(H_{16})_4$, $NaOSiH_2(H_{16})_4$, $NaKH\ H_{70}$, $Si_2H_7(H_{70})$, $Si_3H_9(H_{16})_3$, $Si_3H_{10}(H_{16})_3$, $Si_2H_6(H_{16})_5$, $(SiH_4)_4H_{16}$, $(SiH_4)_3(H_{16})_3$, $Na_2OSiH_2(H_{16})_4$, $Si_3H_8(H_{16})_4$, $Na_2KH\ H_{70}$, $Si_3H_9(H_{16})_4$, $Na_2HKH\ H_{70}$, $SO(H_{16})_6(H_{15})$, $SH_2(OH_{23})H_{16}H_{70}$, $SO(H_{16})_7$, $Mg_2H_2H_{23}H_{16}H_{70}$, $(SiH_4)_4(H_{16})_2$, $(SiH_4)_3(H_{16})_4$, $KH_3O(H_{16})_2H_{70}$, $KH_5O(H_{16})_2H_{70}$, $K(OH_{23})H_{16}H_{70}$, $K_2OH\ H_{70}$, $NaKHO_2H_{70}$, $NaOHNaO_2\ H_{70}$, $HNO_3\ O_2\ H_{70}$, $Rb(H_{16})_5$, $Si_3H_{11}H_{70}$, $KNO_2(H_{16})_5$, $(SiH_4)_4(H_{16})_3$, $KKH(H_{16})_7$, $(SiH_4)_4(H_{16})_4$, $(KH_2)_2(H_{16})_3\ H_{70}$, $(NiH_2)_2\ HCl(H_{16})_2\ H_{70}$, Si_5OH_{102}, $(SiH_3)_7(H_{16})_5$, $Na_3O_3(SiH_3)_{10}\ SiH(H_{16})_5$, X is other element, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen.

159. (Previously Presented) A method of claim 121, having a formula MX wherein M is positive, neutral, or negative and is selected from the list of H_{16}, $H_{16}H$, $H_{16}H_2$, $H_{24}H_{23}$, OH_{22}, OH_{23}, OH_{24}, $MgH_2\ H_{16}$, $NaH_3\ H_{16}$, $H_{24}H_2O$, CNH_{16}, CH_{30}, SiH_4H_{16}, $(H_{16})_3\ H_{15}$, $SiH_4(H_{16})_2$, $(H_{16})_4$, H_{70}, $Si_2H_6H_{16}$, $(SiH_4)_2H_{16}$, $SiH_4(H_{16})_3$, CH_{70}, NH_{69},

NH_{70}, NHH_{70}, OH_{70}, H_2OH_{70}, FH_{70}, H_3OH_{70}, SiH_2H_{60}, $Si(H_{16})_3H_{15}$, $Si(H_{16})_4$, $Si_2H_6(H_{16})_2$, $Si_2H_7(H_{16})_2$, $SiH_3(H_{16})_4$, $(SiH_4)_2(H_{16})_2$, $O_2(H_{16})_4$, $SiH_4(H_{16})_4$, NOH_{70}, O_2H_{69}, $HONH_{70}$, O_2H_{70}, H_2ONH_{70}, $H_3O_2H_{70}$, $Si_2H_6(H_{24})_2$, $Si_2H_6(H_{16})_3$, $(SiH_4)_3H_{16}$, $(SiH_4)_2(H_{16})_3$, $(OH_{23})H_{16}H_{70}$, $(OH_{24})H_{16}H_{70}$, $Si_3H_{10}(H_{16})_2$, Si_2H_{70}, $Si_3H_{11}(H_{16})_2$, $Si_2H_7(H_{16})_4$, $(SiH_4)_3(H_{16})_2$, $(SiH_4)_2(H_{16})_4$, $NaOSiH_2(H_{16})_4$, $NaKH\ H_{70}$, $Si_2H_7(H_{70})$, $Si_3H_9(H_{16})_3$, $Si_3H_{10}(H_{16})_3$, $Si_2H_6(H_{16})_5$, $(SiH_4)_4H_{16}$, $(SiH_4)_3(H_{16})_3$, $Na_2OSiH_2(H_{16})_4$, $Si_3H_8(H_{16})_4$, $Na_2KH\ H_{70}$, $Si_3H_9(H_{16})_4$, $Na_2HKH\ H_{70}$, $SO(H_{16})_6(H_{15})$, $SH_2(OH_{23})H_{16}H_{70}$, $SO(H_{16})_7$, $Mg_2H_2H_{23}H_{16}H_{70}$, $(SiH_4)_4(H_{16})_2$, $(SiH_4)_3(H_{16})_4$, $KH_3O(H_{16})_2H_{70}$, $KH_5O(H_{16})_2H_{70}$, $K(OH_{23})H_{16}H_{70}$, $K_2OH\ H_{70}$, $NaKHO_2H_{70}$, $NaOHNaO_2\ H_{70}$, $HNO_3\ O_2\ H_{70}$, $Rb(H_{16})_5$, $Si_3H_{11}H_{70}$, $KNO_2(H_{16})_5$, $(SiH_4)_4(H_{16})_3$, $KKH(H_{16})_7$, $(SiH_4)_4(H_{16})_4$, $(KH_2)_2(H_{16})_3H_{70}$, $(NiH_2)_2HCl(H_{16})_2H_{70}$, Si_5OH_{102}, $(SiH_3)_7(H_{16})_5$, $Na_3O_3(SiH_3)_{10}SiH(H_{16})_5$, X is an increased binding energy hydrogen compound, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen.

160. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 8 to 12, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species.

161. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 8 to 12, M is an increased binding energy

hydrogen compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species.

162. (Previously Presented) A method of claim 121, having a formula $M^{+}(H_x)_n^{-}$ wherein n is an integer, x is an integer from 14 to 18, M is other element such as an alkali, organic, organometalic, inorganic, or ammonium cation, and the hydrogen content $(H_x)_n^{-}$ of the compound comprises at least one increased binding energy hydrogen species.

163. (Previously Presented) A method of claim 121, having a formula $M^{+}(H_x)_n^{-}$ wherein n is an integer, x is an integer from 14 to 18, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_x)_n^{-}$ of the compound comprises at least one increased binding energy hydrogen species.

164. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 14 to 18, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species.

165. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 14 to 18, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species.

166. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 22 to 26, M is other element such as any

atom, molecule, or compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species.

167. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 22 to 26, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species.

168. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 58 to 62, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species.

169. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 58 to 62, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species.

170. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 68 to 72, M is an atom, molecule, or compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species

171. (Previously Presented) A method of claim 121, having a formula $M(H_x)_n$ wherein n is an integer, x is an integer from 68 to 72, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_x)_n$ of the compound comprises at least one increased binding energy hydrogen species.

172. (Previously Presented) A method of claim 121, having a formula $M(H_x)_q(H_{x'})_r(H_y)_s(H_{y'})_t(H_z)_u$ wherein the monomers may be arranged in any order, q, r, s, t, and u are each an integer including zero but not all zero, x is an integer from 8 to 12, x' is an integer from 14 to 18, y is an integer from 22 to 26, y' is an integer from 58 to 62, z is an integer from 68 to 72, M is other element such as any atom, molecule, or compound, and the hydrogen content $(H_x)_q(H_{x'})_r(H_y)_s(H_{y'})_t(H_z)_u$ of the compound comprises at least one increased binding energy hydrogen species.

173. (Previously Presented) A method of claim 121, having a formula $M(H_x)_q(H_{x'})_r(H_y)_s(H_{y'})_t(H_z)_u$ wherein the monomers may be arranged in any order, q, r, s, t, and u are each an integer including zero but not all zero, x is an integer from 8 to 12, x' is an integer from 14 to 18, y is an integer from 22 to 26, y' is an integer from 58 to 62, z is an integer from 68 to 72, M is an increased binding energy hydrogen compound, and the hydrogen content $(H_x)_q(H_{x'})_r(H_y)_s(H_{y'})_t(H_z)_u$ of the compound comprises at least one increased binding energy hydrogen species.

174. (Previously Presented) A method of claim 121, having a formula $[KHKOH]_p[KH_5KOH]_q[KH\ KHCO_3]_r[KHCO_3]_s[K_2CO_3]$ wherein the monomers may be arranged in any order, p, q, r, s, and t are each an integer including zero but not all zero, the compound contains at least one H, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen.

175. (Previously Presented) A method of claim 121, having a formula $[MH_m]_n[MM'H_m]_n[KH_mKCO_3]_n[KH_mKNO_3]_n^+ nX^-[KHKNO_3]_n$

$[KHKOH]_n[MH_mM'X]_n[MH_mM'X']_n^{m'+}\ n'X^-[MH_mM'X']_n^{m'-}\ n'M''^+[MH_m]_n^{m'+}\ n'X^-$
$[MH_m]_n^{m'-}\ n'M^+M^+H_{16}^-[KHKOH]_p[KH_5KOH]_q[KHKHCO_3]_r[KHCO_3]_s[K_2CO_3]$

wherein the monomers may be arranged in any order, n, n', m, m', p, q, r, s, and t are each an integer including zero but not all zero, M, M', and M" are each an alkali or alkaline earth, organic, organometalic, inorganic, or ammonium cation, X and X' are a singly or doubly negative charged anion, the compound contains at least one H, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen species.

176. (Previously Presented) A method of claim 121, having a formula

$[MH_m]_n[MM'H_m]_n[KH_mKCO_3]_n[KH_mKNO_3]_n^+\ nX^-[KHKNO_3]_n$
$[KHKOH]_n[MH_mM'X]_n[MH_mM'X']_n^{m'+}\ n'X^-[MH_mM'X']_n^{m'-}\ n'M''^+[MH_m]_n^{m'+}\ n'X^-$
$[MH_m]_n^{m'-}\ n'M^+M^+H_{16}^-[KHKOH]_p[KH_5KOH]_q[KHKHCO_3]_r[KHCO_3]_s[K_2CO_3]$
$M'''(H_{10})_{q'}(H_{16})_{r'}(H_{24})_{s'}(H_{60})_{t'}(H_{70})_u$ wherein the monomers may be arranged in

any order, n, n', m, m', p, q, r, s, t, q', r', s', t', and u are each an integer including zero but not all zero, M, M', and M" are each an alkali or alkaline earth, organic, organometalic, inorganic, or ammonium cation, M"' is other element, X and X' are a singly or doubly negative charged anion, the compound contains at least one H, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen species.

177. (Previously Presented) A method of claim 121, having a formula

$[MH_m]_n[MM'H_m]_n[KH_mKCO_3]_n[KH_mKNO_3]_n^+\ nX^-[KHKNO_3]_n$
$[KHKOH]_n[MH_mM'X]_n[MH_mM'X']_n^{m'+}\ n'X^-[MH_mM'X']_n^{m'-}\ n'M''^+[MH_m]_n^{m'+}\ n'X^-$
$[MH_m]_n^{m'-}\ n'M^+M^+H_{16}^-[KHKOH]_p[KH_5KOH]_q[KHKHCO_3]_r[KHCO_3]_s[K_2CO_3]$
$M'''(H_{10})_{q'}(H_{16})_{r'}(H_{24})_{s'}(H_{60})_{t'}(H_{70})_u$ wherein the monomers may be arranged in

any order, n, n', m, m', p, q, r, s, t, q', r', s', t', and u are each an integer including zero but not all zero, M, M', and M" are each an alkali or alkaline earth, organic,

organometalic, inorganic, or ammonium cation, M''' is an increased binding energy hydrogen compound, X and X' are a singly or doubly negative charged anion, the compound contains at least one H, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen species.

178. (Previously Presented) A method of claim 121, having a formula $[MH_m]_n[MM'H_m]_{n'}[KH_mKCO_3]_n[KH_mKNO_3]_n^+ nX^-[KHKNO_3]_n$ $[KHKOH]_n[MH_mM'X]_{n'}[MH_mM'X']_n^{m'+} n'X^-[MH_mM'X']_n^{m'-} n'M''^+[MH_m]_n^{m'+} n'X^-$ $[MH_m]_n^{m'-} n'M^+M^+H_{16}^-[KHKOH]_p[KH_5KOH]_q[KHKHCO_3]_r[KHCO_3]_s[K_2CO_3]$ $M'''(H_x)_q(H_{x'})_r(H_y)_s(H_{y'})_t(H_z)_u$ wherein the monomers may be arranged in any order, n, n', m, m', p, q, r, s, t, q', r', s', t', and u are each an integer including zero but not all zero, x is an integer from 8 to 12, x' is an integer from 14 to 18, y is an integer from 22 to 26, y' is an integer from 58 to 62, z is an integer from 68 to 72, M, M', and M'' are each an alkali or alkaline earth, organic, organometalic, inorganic, or ammonium cation, M''' is other element, X and X' are a singly or doubly negative charged anion, the compound contains at least one H, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen species.

179. (Previously Presented) A method of claim 121, having a formula $[MH_m]_n[MM'H_m]_{n'}[KH_mKCO_3]_n[KH_mKNO_3]_n^+ nX^-[KHKNO_3]_n$ $[KHKOH]_n[MH_mM'X]_{n'}[MH_mM'X']_n^{m'+} n'X^-[MH_mM'X']_n^{m'-} n'M''^+[MH_m]_n^{m'+} n'X^-$ $[MH_m]_n^{m'-} n'M^+M^+H_{16}^-[KHKOH]_p[KH_5KOH]_q[KHKHCO_3]_r[KHCO_3]_s[K_2CO_3]$ $M'''(H_x)_q(H_{x'})_r(H_y)_s(H_{y'})_t(H_z)_u$ wherein the monomers may be arranged in any order, n, n', m, m', p, q, r, s, t, q', r', s', t', and u are each an integer including zero but not all zero, x is an integer from 8 to 12, x' is an integer from 14 to 18, y is an integer from 22 to 26, y' is an integer from 58 to 62, z is an integer from 68 to 72, M, M', and M'' are each an alkali or alkaline earth, organic, organometalic,

inorganic, or ammonium cation, M''' is an increased binding energy hydrogen compound, X and X' are a singly or doubly negative charged anion, the compound contains at least one H, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen species.

180. (Previously Presented) A method of claim 121, having a formula $[MH_m]_n[MM'H_m]_{n'}[KH_mKCO_3]_r[KH_mKNO_3]_s^+ nX^-[KHKNO_3]_t$ $[KHKOH]_u[MH_mM'X]_v[MH_mM'X']_n^{m'+} n'X^-[MH_mM'X']_n^{m'-} n'M''^+[MH_m]_n^{m'+} n'X^-$ $[MH_m]_n^{m'-} n'M^+M^+H_{16}^-[KHKOH]_p[KH_5KOH]_q[KHKHCO_3]_r[KHCO_3]_s[K_2CO_3]$ $M''(H_x)_q(H_{x'})_r(H_y)_s(H_{y'})_t(H_z)_u$ wherein the monomers may be arranged in any order, n, n', m, m', p, q, r, s, t, q', r', s', t', and u are each an integer including zero but not all zero, x is an integer from 8 to 12, x' is an integer from 14 to 18, y is an integer from 22 to 26, y' is an integer from 58 to 62, z is an integer from 68 to 72, M, M' and M'' are each a metal such as silicon, aluminum, Group III A elements, Group IVA elements, a transition metal, inner transition metal, tin, boron, or a rare earth, lanthanide, an alkali or alkaline earth, organic, organometalic, inorganic, or ammonium cation, M''' is other element, X and X' are a singly or doubly negative charged anion, the compound contains at least one H, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen species.

181. (Previously Presented) A method of claim 121, having a formula $[MH_m]_n[MM'H_m]_{n'}[KH_mKCO_3]_r[KH_mKNO_3]_s^+ nX^-[KHKNO_3]_t$ $[KHKOH]_u[MH_mM'X]_v[MH_mM'X']_n^{m'+} n'X^-[MH_mM'X']_n^{m'-} n'M''^+[MH_m]_n^{m'+} n'X^-$ $[MH_m]_n^{m'-} n'M^+M^+H_{16}^-[KHKOH]_p[KH_5KOH]_q[KHKHCO_3]_r[KHCO_3]_s[K_2CO_3]$ $M''(H_x)_q(H_{x'})_r(H_y)_s(H_{y'})_t(H_z)_u$ wherein the monomers may be arranged in any order, n, n', m, m', p, q, r, s, t, q', r', s', t', and u are each an integer including zero but not all zero, x is an integer from 8 to 12, x' is an integer from 14 to 18, y is an

integer from 22 to 26, y' is an integer from 58 to 62, z is an integer from 68 to 72, M, M' and M" are each a metal such as silicon, aluminum, Group III A elements, Group IVA elements, a transition metal, inner transition metal, tin, boron, or a rare earth, lanthanide, an alkali or alkaline earth, organic, organometalic, inorganic, or ammonium cation, M"' is an increased binding energy hydrogen compound, X and X' are a singly or doubly negative charged anion, the compound contains at least one H, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen species.

182. (Previously Presented) A method of claim 121, having a formula $Si_xH_y(H_{16})_z$ wherein x is an integer, y is an integer from 2x+2 to 4x, z is an integer, and the hydrogen content H of the compound comprises at least one increased binding energy hydrogen species.

183. (Previously Presented) A method of claim 136, wherein said singly negative charged anion is selected from the group consisting of halogen ions, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

184. (Previously Presented) A method of claim 139, wherein said singly negative charged anion is selected from the group consisting of halogen ion, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

185. (Previously Presented) A method of claim 140, wherein said singly negative charged anion is selected from the group consisting of halogen ion, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

186. (Previously Presented) A method of claim 141, wherein said singly negative charged anion is selected from the group consisting of halogen ions, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

187. (Previously Presented) A method of claim 142, wherein said singly negative charged anion is selected from the group consisting of halogen ion, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

188. (Previously Presented) A method of claim 175, wherein said singly negative charged anion is selected from the group consisting of halogen ions, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

189. (Previously Presented) A method of claim 176, wherein said singly negative charged anion is selected from the group consisting of halogen ion, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

190. (Previously Presented) A method of claim 177, wherein said singly negative charged anion is selected from the group consisting of halogen ion, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

191. (Previously Presented) A method of claim 178, wherein said singly negative charged anion is selected from the group consisting of halogen ions, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

192. (Previously Presented) A method of claim 179, wherein said singly negative charged anion is selected from the group consisting of halogen ions, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

193. (Previously Presented) A method of claim 180, wherein said singly negative charged anion is selected from the group consisting of halogen ions, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

194. (Previously Presented) A method of claim 181, wherein said singly negative charged anion is selected from the group consisting of halogen ion, hydroxide ion, hydrogen carbonate ion, dihydrogen phosphate, and nitrate ion.

195. (Previously Presented) A method of claim 139, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

196. (Previously Presented) A method of claim 140, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

197. (Previously Presented) A method of claim 142, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

198. (Previously Presented) A method of claim 175, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

199. (Previously Presented) A method of claim 176, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

200. (Previously Presented) A method of claim 177, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

201. (Previously Presented) A method of claim 178, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

202. (Previously Presented) A method of claim 179, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

203. (Previously Presented) A method of claim 180, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

204. (Previously Presented) A method of claim 181, wherein said doubly negative charged anion is selected from the group consisting of carbonate ion, oxides, phosphates, hydrogen phosphates, and sulfate ion.

205. (Currently Amended) A method of making a compound comprising a hydrino atom and at least one other element, the method comprising the step of reacting hydrogen atoms with a gaseous catalyst comprising at least one selected from the group consisting of atoms of Li, Be, K, Ca, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As, Se, Kr, Rb, Sr, Nb, Mo, Pd, Sn, Te, Cs, Ce, Pr, Sm, Gd, Dy, Pb, and Pt to form hydrino atoms; and reacting the hydrino atoms with at least ~~on~~ one other element to form said compound.

206. (New) A method of making a compound according to claim 205, wherein a temperature of reaction is such that gaseous Li atoms are present.